

STORMS AND WEATHER WARNINGS.

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There were issued regularly during the month, the daily forecasts of weather, temperature, and winds for the various State forecast units, winds and weather for the water areas off the Atlantic and Pacific coasts and for the Great Lakes, the Gulf of Mexico, and the western part of the Caribbean Sea, aviation forecasts for the several zones and for the Army airways; and in addition to these daily issues, warnings of frost and freezing temperatures for the States were disseminated as required. Moreover, storm warnings for the coastal regions and the Great Lakes and special advices concerning weather and temperature changes for the continent were issued as required.

The month of April was not particularly abnormal from a forecasting standpoint, except as to the frequency of frost warnings and the occurrence of late frosts. Forecasts of snows in the Northern States were also more numerous than is usual in the month of April.

WASHINGTON FORECAST DISTRICT.

In the Washington Forecast District frost warnings were issued on a number of days, the more important being on the 5th for Tennessee and the extreme north portions of Alabama and Mississippi; on the 8th for freezing temperature or frost for the lower Great Lakes region, the Ohio Valley, the Middle Atlantic States, Tennessee, and the north portions of the east Gulf States; on the 9th for nearly the same areas and the north portions of Georgia and South Carolina; on the 16th for the Atlantic States as far south as western North Carolina and the Ohio Valley and northern Tennessee; on the 17th for the Middle Atlantic States, the Ohio Valley, Tennessee, and the north portions of Alabama and Mississippi; on the 18th for nearly all parts of the Washington Forecast District, the South Atlantic and Gulf coasts excepted; on the 24th and 25th for the lower Great Lakes region, the Upper Ohio Valley, and the Middle Atlantic States; and on the 30th for the upper Ohio Valley, the lower Great Lakes region, and the North Atlantic States.

Warnings of winds more or less dangerous to navigation on coastal waters were issued as follows during the month: On the 9th at 9:30 p. m., southwest storm warning were displayed on the Atlantic coast at and between the Virginia Capes and Eastport, Me.; on the 11th, an advisory warning of strong winds was issued for the North Atlantic coast; on the 12th, small craft warnings were displayed over the Mobile and Pensacola storm-warning sections; and on the 13th and 14th storm warnings were displayed on the Middle Atlantic and southern New England coasts and on the 15th the display was extended northward to Eastport, Me.; on the 20th, the small-craft warning was displayed on the east Gulf coast west of Tampa; on the 23d, northwest storm warnings were displayed on the Atlantic coast at and between New London, Conn., and Provincetown, Mass.; on the 28th, small-craft warnings were displayed on the Atlantic coast at and north of Cape Hatteras and at 9:30 p. m. of the same day the warnings were changed to southeast storm on the New England coast; on the 29th, small-craft warnings were displayed on the South Atlantic coast at and between Wilmington, N. C., and Jacksonville, Fla.

CHICAGO FORECAST DISTRICT.

Over most of the district the month was cooler than usual, but not markedly so except in the eastern portion of Upper Michigan, where the temperature averaged 5° below the normal. A feature of the temperature conditions was the rapid alternations from day to day during the first half of the month. The precipitation was deficient in most sections, especially in the middle Mississippi Valley, but more than the normal amount occurred in Montana, the western portions of North Dakota and Kansas, northwestern Iowa, northern Lower Michigan, and the extreme southern portions of Illinois and Indiana.

So far as the occurrence of conditions calling for special warnings is concerned the month was rather uneventful.

Cold-wave warnings.—The only cold-wave warnings issued were those on the 6th for Upper Michigan and extreme northern Lower Michigan. In the main, these warnings were verified, but the cold wave was of little importance. On the 7th a decided fall in temperature occurred over most of the Central Plains States and middle Mississippi Valley, the fall attaining the proportions of a cold wave in portions of eastern Kansas and a small area in northwestern Missouri.

Live-stock warnings.—Live-stock warnings were issued on the 6th for southeastern Wyoming and the western portions of South Dakota and Nebraska, and again on the 22d for western Nebraska. In neither case, however, did the ensuing conditions become severe.

Frost warnings.—Owing to the lateness of the season the advance of vegetation was decidedly backward and the frosts of the month were of little economic importance. At the opening of the month frost warnings were required only in southeastern Kansas, but as the month advanced this area spread slowly northward, so that by the close Kansas, Nebraska, Missouri, and most of Iowa, Illinois, and Indiana were included. Warnings of frost or freezing temperature were issued on the following dates: 5th, 7th, 8th, 9th, 11th, 13th, 14th, 15th, 16th, 17th, 20th, 21st, 23d, 24th, and 26th.

Storm warnings.—The storm-warning season on the Great Lakes was opened on the 21st except in the case of Lake Superior, where the opening date was deferred to May 1. These dates are later than usual as a result of the severe character of the latter part of the winter, together with the backwardness of the spring season. Generally speaking, the accumulation of ice in the Great Lakes was the heaviest in years.

Preceding the opening of the storm-warning season advisory warnings were issued for Lake Michigan on the 1st, 7th, 11th, 13th, 15th, 19th, and 20th. The disturbance of the 7th–8th attained some intensity, and moderate gales occurred over most of the Lake. Farther east on the lower Lakes the storm became more severe, fresh to strong gales being reported. On the morning of the 20th a trough of low pressure of considerable depth was advancing eastward across the Plains States, and an advisory warning for strong southerly winds was issued for Lake Michigan. By the following morning the disturbance had developed still further, with a definite center over Iowa and a barometer reading of 29.24 inches. Accordingly, southwest storm warnings were issued for Lakes Michigan, Huron, and Erie, and later,